hatch at the bottom of the bell, in which position his face was only inches away from the gas supply nozzle. On regaining consciousness he remembered having felt nausea, and he had bitten his tongue and had a bruise on his forehead. He appeared to have suffered a convulsion as a result of oxygen toxicity,[3] as the partial pressure of inspired oxygen could have been nearly 2000 kPa (20 bars). Subsequent questioning excluded a history of epilepsy, and an electroencephalogram did not show any epileptic features.

Comment

The two cases show opposite extremes of partial pressure of inspired oxygen in hyperbaric conditions and could both have been fatal. The hypoxic incident might have led to further injury if the divers had fallen in the steel chamber and would not have happened if the lock had been opened immediately the chamber reached the surface. This would have allowed passive equilibration between the helium and oxygen in the chamber and atmospheric air through the hatch as is conventional practice. The accident highlights the danger of using cylinders containing 100% helium in diving. They are not necessary operationally, and the recommendation that diving gas offshore should be available only as compressed air or as prepared mixtures of helium and oxygen in the appropriate ratios deserves special consideration.[4] The concept of premixed respirable gas is not new, and the need for ensuring a supply of oxygen is greatest when the administration of a respirable gas mixture is not under constant medical supervision.[5] In contrast, the hyperoxic episode was due to mechanical failure and shows the importance of thorough maintenance and checking of equipment.

Both cases indicate that there may be an ergonomic need for improved monitoring and display of gas analysis. The use of audio alarms for high and low oxygen concentrations both at the console and in the diving bell would ensure that changes in ambient atmosphere are detected early. There is a good case for such a system becoming mandatory.

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[1] Anonymous. A guide to the diving operations at work regulations. *Health and safety series booklet HS(R)8*. London: HMSO, 1981. (Regulation 12(i) (g): schedule 6, para 123.)
[2] End E. The use of new equipment and helium gas in a world record dive. *Journal of Industrial Hygiene and Toxicology* 1938;**20**:511-20.
[3] Donald KW. Oxygen poisoning in man. *Br Med J* 1947;i:667-72, 712-7.
[4] James PB. Shallow water blackout at a thousand feet. *Pressure* 1980;**9**: 8-9. (Newsletter of the Undersea Medical Society.)
[5] Tunstall ME. Implications of premixed gases and apparatus for their administration. *Br J Anaesth* 1968;**40**:675-82.

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Chalazions: the frequency of spontaneous resolution

A chalazion is a "chronic inflammatory granuloma caused primarily by the retention of the secretion of a tarsal gland." Few published reports have mentioned its clinical course. We have always suspected that some would resolve without surgery, and indeed Duke-Elder and MacFaul stated that "in some early cases [the chalazion] may be absorbed and disappear."[1] A recent industrial dispute in the National Health Service caused a backlog to develop in our minor operations list, giving us an opportunity to review retrospectively the course of 87 chalazions.

Patients, methods, and results

We studied patients who had presented to our department during the dispute (May to November 1982) with one or more chalazions. They had been asked to wait until the end of the dispute for incision and curettage. Sixty nine patients had been listed for surgery: 54 had one chalazion, 12 had two, and three had three. We reviewed the notes to see how many chalazions had resolved before surgery was undertaken.

Twenty two chalazions (25·3%) in 20 patients resolved, and 50 (57·5%) in 44 patients were incised and curetted. Eleven patients (with 15 chalazions (17·2%)) did not attend when requested and did not reply to a letter requesting the reason. It is probably safe to assume that in some of these the chalazions had resolved spontaneously.

The mean ages in the groups were similar (from 37·0 to 39·5 years), with an overall age range of 13-68 years. The duration of the complaint was measured as the time from the onset of symptoms to either surgery or confirmation that the lesion had resolved. This was a mean of 6·6 months (range 1-28) in those who underwent surgery and 5·4 months (range 1·5-12) in those whose chalazions resolved.

Duration of 72 chalazions

Duration (months)	Chalazions	
	Resolved (n = 22)	Incised and curetted (n = 50)
< 2	4	5
2-4	5	12
4-6	6	14
6-8	2	7
≥ 8	5	12

Patients whose chalazions resolved were questioned about how much conservative treatment they had applied. Of the 10 who replied, nine had used a topical antibiotic or hot bathing, or both. None had followed an intensive regimen, most using drops or ointment two or three times a day for one to two weeks with only occasional application of heat.

The timing of surgery depended only on the duration of the complaint at the end of the industrial dispute. The table shows the course of events.

Comment

At least 22 chalazions (25%) and (including those of non-attenders) possibly 37 (43%) out of 87 resolved within a mean of six months from their onset, with only minimal conservative treatment. This is interesting in the light of three recent studies in which 50-90% success rates were obtained with more elaborate conservative treatments (intensive antibiotics, hot bathing, or intralesional corticosteroids).[2-4]

There was apparently no way of predicting from the information recorded in our notes which chalazions would resolve. The duration of the complaint was not a reliable guide to the likelihood of spontaneous resolution in the next two months (table). The decision whether patients with chalazions require referral to an eye department for surgery may therefore be based on the degree of discomfort from the lesion and the patient's attitude towards possible surgery, which is quick but uncomfortable. Many patients would probably prefer to wait at least six months before resorting to an operation and might therefore be managed by their general practitioner, perhaps with a trial of antibiotics and hot bathing. Those patients, however, who would rather be rid of their chalazion quickly by surgery may reasonably be referred early. Any atypical chalazion should be referred to exclude malignancy.

We thank the consultant staff of our unit for permission to study their patients and the secretarial staff for their invaluable help.

[1] Duke-Elder WS, MacFaul PA. *System of ophthalmology*. Vol XIII. London: Henry Kimpton, 1974:242-4.
[2] Bohigian GM. Chalazion: a clinical evaluation. *Ann Ophthalmol* 1979;**11**: 1397-8.
[3] Perry HD, Serniuk RA. Conservative treatment of chalazia. *Ophthalmology (Rochester)* 1980;**87**:218-21.
[4] Pizzarello LD, Jakobiec FA, Hofeldt AJ, Podolsky MM, Silvers DN. Intralesional corticosteroid therapy of chalazia. *Am J Ophthalmol* 1978; **85**:818-21.

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